

Amendments To the Specification

Please replace the paragraph starting at page 11, line 17, with the following paragraph.

In a first embodiment, the present invention relates to an electronic device 200, also referred to as a tuneable current-induced oscillator, comprising a magnetic excitable layer 202, e.g. ferromagnetic excitable layer 202, a means for providing a current of spin polarised charge carriers 204 into the excitable layer 202 such that oscillations are generated in the ferromagnetic excitable layer 202 with a frequency ν_{osc} and a means for interaction 206 with the ferromagnetic excitable layer as to select a frequency of the generated oscillations. See Fig. 4. For clarity reasons in the following a ferromagnetic excitable layer 202 will be discussed further, although the invention is not limited to ferromagnetic excitable layers but refers to all magnetic excitable layers. In a preferred embodiment the means for interaction 206 with the ferromagnetic excitable layer as to select a frequency of the generated oscillations may be a means for interaction 206 with the ferromagnetic excitable layer as to tune a frequency of the generated oscillations. The latter implies that the frequency can not only be selected during designing or production of the device but that the frequency also can be selected during use, i.e. that the frequency can be tuned during use. A schematic representation of the different components of the device 200 and the interaction between the different components is illustrated in Fig. 4. It is an advantage of the embodiments of the present invention that novel methods and corresponding

devices are provided for setting the frequency of a current induced oscillator with high controllability.

Please replace the paragraph starting at page 15, line 22, with the following paragraph.

In a second embodiment of the present invention, the present invention relates to a device as described in the first embodiment, wherein the means for interaction 206 with the ferromagnetic excitable layer as to select/tune a frequency of the generated oscillations is a means that can set the frequency by biasing the ferromagnetic excitable layer. See Figs. 6a, 6b and 6c. The biasing can be provided by bringing the ferromagnetic excitable layer in physical contact or in partial physical contact with an interacting layer which is an anti-ferromagnetic layer 222, as shown in the device 220 in Fig. 6a. Through the exchange bias effect, which is a phenomenon that results because the spins of the ferromagnetic and anti-ferromagnetic material at the interface have to aligned in a compatible way, the hysteresis loop of the ferromagnetic excitable layer 202 will shift to higher external bias fields, such that a smaller or no external bias field is needed anymore to bias to set the frequency and to reach the high quality factors obtained before by using an external magnetic bias field. The anti-ferromagnetic material may be a metal e.g. IrMn, FeMnor an isolator e.g. CrO₂. If the anti-ferromagnetic material is metallic, it may be part of the stack that is traversed by the current and the Joule heating by the current may reduce the exchange bias field, because the exchange bias field is strongly temperature

dependent. The anti-ferromagnetic material may also be in physical contact with the excitable layer without being a part of the stack traversed by the current. In that case the anti-ferromagnetic material may also be the isolator 214 that is used for the definition of the nanohole. See Fig. 6b.

Please replace the paragraph starting at page 16, line 11, with the following paragraph.

The biasing can also be provided by an additional ferromagnetic material 224 that is part of the device and that is magnetostatically coupled (in magnetic contact) to the ferromagnetic excitable layer 202. See Fig. 6c. The additional ferromagnetic material 224 does not have to be, but can be, in physical contact with the ferromagnetic excitable layer but has to be close enough to the ferromagnetic excitable layer 202 as to provide magnetic flux generated by the additional ferromagnetic material 224 to penetrate the ferromagnetic excitable layer 202, as shown in Fig. 6a and 6b. The additional ferromagnetic material 224 may be lying under or next to the current induced oscillator. The additional ferromagnetic material 224 may also be the isolator that is used for the definition of a nanohole.